RISC USER GUIDE

Chapter 2

RCRA CLOSURE
And
CORRECTIVE ACTION

2.0 Introduction

- This Chapter provides *default* options for achieving RCRA closure, or "No Further Action" status for Corrective Action SWMU's.
- A site-specific *non-default* approach may be proposed. Refer to Chapter 7 of RISC Technical Guidance Document.

2.0 Introduction (continued)

- User Guide Chapter 2 replaces the Hazardous Waste Management Unit Closure Guidance, July 1997.
- Questions? Contact the OLQ Project Manager.

2.1 Definitions

- Most are from 40 CFR 260.10.
- Others derived from statutes, etc.

2.2 Closure Overview

There are two general types of closure:

❶ Closure by removal or decontamination.

❷ Closure with waste remaining in-place.

2.2.1 How do I achieve closure by removal?

For soil - Demonstrate

❶ Remaining contamination ≤ EQL for organics, and ≤ background levels for inorganics, or

❷ Remaining contamination does not exceed residential closure levels.

2.2.1 How do I achieve closure by removal?

Groundwater Closure Levels

❶ Constituent concentrations listed 40 CFR 264.94(a), or

❷ The Maximum Contaminant Limits (MCL's) in 40 CFR 141, or

❸ Alternate Concentration Limits established in accordance with 40 CFR 264.94 (a)(3), or

❹ Background levels for each constituent as specified in the permit, if applicable.

2.2.1 Closure In Place

- Industrial Closure - contamination (up to industrial closure level) remains in place.
- Land Disposal - waste remains in place.

2.4 Closure Plan Preparation

- Unchanged from previous guidance.
- Questions? Contact the OLQ Project Manager.

2.5 Administrative Closure Procedures

- Unchanged from previous guidance
- Questions? Contact the OLQ Project Manager.

2.6 Closure Options

Table 2-1

Closure Types	Removal or Decontamination		In-Place	
	Clean	Risk-Based Residential	Risk-Based Industrial	Land Disposal
Closure Levels	Background or EQL	Default or Non-Default	Default or Non-Default	NA
Post Closure	No	No	Limited	Yes

2.6.2 What is Industrial Closure?

- Removal of all waste.
- Remaining soil contamination ≤ industrial closure levels (default or non-default).
- Groundwater contamination ≤ industrial levels at the perimeter of compliance and below the default residential levels beyond the point of property control (plume stability demonstration).
- Limited Post - Closure care.

BUT

Proposed statutory language currently being considered by the State Legislature gives IDEM authority to enforce restrictive covenants that impose:

- Land use restrictions
- Activity restrictions for industrial closures

THEREFORE

Industrial Closure may move from the "Closure in-place" category to the "Closure by Removal and Decontamination" category, assuming IDEM approved restrictive covenant is in place.

Termination of Restrictive Covenant

Restrictive covenant can only be removed by remediating soil and groundwater to residential closure levels.

2.6.3 Closure In Place

Post closure requirements via a Permit or an Order apply to:

- HWMU's or SWMU's utilizing engineering controls to prevent exposure to contamination.
- HWMU's or SWMU's where hazardous waste remains in-place (e.g. landfill).
- RISC does Not Apply.

RCRA Corrective Action

Who Is Affected:

- Treatment, storage, or disposal (TSD) facilities seeking a RCRA operating permit
- TSD facilities subject to RCRA post-closure
- Active interim status TSD facilities
- Closed interim status TSD facilities
- Illegally operating TSD facilities

Conducting Site Evaluation

- Identify potential sources of releases of hazardous waste or constituents to the environment
  - includes any chemical that may pose a substantial present or potential hazard to human health or the environment
- Determine if a release has occurred
  - see Chapter 3 of RISC Technical Resource Guidance Document
- If a release has occurred, establish the nature and extent
  - see Chapter 4 of RISC Technical Resource Guidance Document

What Comes Next

- After sufficient information has been collected, the unit (or facility) can be:
  - evaluated for no further action (see appropriate closure levels in Appendix 1 of RISC Technical Resource Guidance Document)
  - evaluated for no further action (see Chapter 7 of RISC Technical Resource Guidance Document)
  - evaluated for remediation technology or combination of technologies

Remedy Selection

- Proven remedies
- Innovative remedies
- Public Notice
- Selection of remedy by IDEM

Financial Assurance

- Some form of financial assurance is required to guarantee the completion of the cleanup. Commonly accepted mechanisms include:
  - Trust fund
  - Surety bond guaranteeing performance
  - Letter of credit
  - Financial test
  - Corporate guarantee

Sampling

Sample Requirements
Analytical Requirements
Soil Sampling

Sample and Analysis Plans

- Where you are sampling
- How you are sampling
- Sample containers and preservation techniques
- What parameters you are analyzing for
- What analytical methods you are using
- EQLs - to meet closure levels
- Chain of custody procedures

Sampling Quality Assurance

- Data Quality Objectives (DQOs)
  - determine the type, quality, and quantity of data to make and defend a particular decision
- SW-846 is the basic guidance for sampling QA

Sampling Quality Assurance

- Field duplicates
- Field blanks -trip, equipment, field
- Sufficient sample quantity for determining analytical precision, MS/MSD or matrix duplicate
  - Matrix spike must be from same batch = facility
  - Blanks may not be used - not the same matrix
- VOC sampling procedures

Analytical Requirements

- QAPP - detail procedures for obtaining quality data, including quality criteria for the analytical methods
- SW-846 methods preferred but equivalent methods may be used. PBMS might be appropriate
- Appropriate QA/QC of method - state in QAPP

Appropriate QA/QC

- Tuning
- Calibrations
- Blanks
- Surrogates and Internal Standards
- Matrix Spike - determine bias
- Matrix Spike duplicate or matrix duplicate
- Laboratory Control Samples
- Interference Check Samples

Analytical Requirement Guidance

- Hazardous Waste Program: Analytical Data Deliverable Requirements
- Guidance to the Performance and Presentation of Analytical Chemistry Data
- Appendix 2 of the Technical Guidance Manual

Soil Sampling Constituent Evaluation

- Hazardous Waste
- Hazardous Constituents
- Breakdown Products
- other potential constituents used at the facility
- Corrective Action list may be more extensive

Closure Levels

- Rinsate of pads, tanks, etc. MCLs or EQLs
  - Demonstration of waste removal, not based on an exposure
- Default Closure Levels - based on land use
- Non-Default Closure Levels
- EQLs or Background
  - e.g., naturally occurring metals near RISC levels

Screening Sample Locations

- RISC Default Procedures
  - Max or Chen for surface soils in a possibly contaminated area
    - Must still screen subsurface
  - Subsurface in a known contaminated area
    - using field screening instrument if available
- Non-Default - e.g., Random Grid
- Entire soil column evaluated against closure level.

Nature and Extent Sampling

- Follow principles in Technical Guidance Manual
- Extent = both the vertical and horizontal boundaries of the contamination
- Nature = Concentration of contamination across that zone
- PEC compared to closure levels

Closure Sampling

- Follow principles in Technical Guidance Manual
- Minimum number of samples
- Sample locations
- Decision criteria
- PEC compared to closure levels

Chapter 2 User's Guide

Ground Water Sampling at RCRA Facilities

Ground Water Sampling

- Subpart F units
  - Planned or potential land disposal
  - Ground water monitoring required
    - Compliance point
  - Ground water sampling may be necessary
- Non-subpart F units
  - Generators and storage
  - Ground water sampling required?
  - Ground water monitoring may be necessary
    - Perimeter of compliance

Ground Water Sampling

- Content of the closure plan
  - Consistent with applicable requirements of subpart F
- Required sampling
  - ...Criteria for determining the extent of decontamination required to satisfy the closure performance standard, and
  - ...Including, but not limited to, ground water monitoring...

Ground Water Sampling

- Sampling & analysis subpart F units
  - Hazardous constituents (40 CFR 264 appendix IX)
  - Removal from list
- Sampling & analysis non-subpart F units
  - Hazardous constituents (40 CFR 261 appendix VIII)
  - Removal from list

Ground Water Sampling

- Screening subpart F units
  - Compliance point
  - Sampling within compliance point
- Screening non-subpart F units
  - Chapter 3 technical guide
  - Additional Samples

Ground Water Sampling

- Nature and extent
  - Subpart F units
    - Detect above Background
  - Assessment or compliance
  - Compliance period
  - Final closure
- Nature and extent
  - Non-subpart F units
  - Chapter 4 technical guide
    - Detect above Residential
  - Samples
  - Temporal monitoring

Ground Water Sampling

- Closure sampling for subpart F units
  - Identify Potential Harm within Compliance Point for Constituents Detected
- Closure sampling for non-subpart F units
  - Identify Potential Harm with Samples below Residential Levels

Ground Water Sampling

- Closure Monitoring Subpart F Units
  - Three Years of (6 semi-annual) Samples Statistically below Standard
  - Identify Potential Harm
    - Five Years of Non-Expanding Plume
- Closure Monitoring Non-Subpart F Units
  - Two Years (8 quarters) of Samples Statistically below Standard
  - Identify Potential Harm
    - Five Years of Non-Expanding Plume

Ground Water Sampling

- Post-Closure Monitoring
  - Detection Monitoring
    - Post-Closure Care
  - Compliance Monitoring
    - Compliance Period
  - Corrective Action
    - At least Three Years